

## Claims:

1. A master mold comprising a support layer comprised of a high grinding speed material and a fine structure pattern comprised of a low grinding speed material supported by said support layer.
2. The master mold of claim 1, wherein said high grinding speed material is a metal material.
3. The master mold of claim 1 or 2, wherein low grinding speed material is glass or ceramics.
4. The master mold of any of claims 1-3 wherein the mold is suitable for making plasma display panel ribs.
5. The master mold of claims 1-3 wherein the mold is suitable for making microfluidic articles.
6. The master mold of claim 1 wherein said fine structure pattern is a grid-like protrusion pattern comprising a plurality of ridge-like protrusions arranged substantially parallel while intersecting one another with predetermined gaps among them.
7. A master mold comprising:
- a support layer comprised of a metal material;
  - a fine structure pattern comprised of a glass or ceramic material formed on said support layer; wherein said fine structure pattern comprises ribs having:
    - a rib height of 150 to 300  $\mu\text{m}$ ,
    - a rib pitch of 150 to 800  $\mu\text{m}$ , and
    - a rib width of 50 to 80  $\mu\text{m}$ .
8. A master mold comprising a support layer comprised of a high grinding speed material and a fine structure pattern comprised of a low grinding speed material supported by said

support layer, wherein said fine structure pattern is formed by selectively removing said low grinding speed material such that a fine structure pattern is formed.

5 9. The master mold of claim 8 wherein the low grinding material is removed by sand blasting.

10. The master mold of claim 8 wherein the low grinding material is removed by chemical etching.

10 11. A method of producing a master mold comprising the steps of:  
forming a support layer from a low grinding speed material material;  
depositing a layer of a high grinding speed material on said support layer to form a  
composite material layer;  
forming a mask on said composite material layer;  
15 selectively removing said layer of high grinding speed material such that the  
support layer is exposed; and  
peeling said mask from said layer of said high grinding speed material.

20 12. The method of claim 11, wherein said high grinding speed material is a metal material.

13. The method of claim 11 or 12, wherein low grinding speed material is glass or ceramics.

25 14. The method of any of claims 11 to 13 wherein the high grinding speed material is removed by sand blasting.

15. The method of any of claims 11 to 13 wherein the high grinding speed material is removed by chemical etching.

30 16. The method of any of claims 11 to 15, wherein the high grinding speed material is formed by spraying, enameling or a sol-gel method.

17. The method of any of claims 11 to 16, wherein said mask is formed by the steps of forming a layer of a mask-forming material on said composite material layer and then patterning it into a desired shape by photolithography.

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